

not satisfactory, the undersigned requests that the Examiner contact him at the contact number below. Upon approval of the proposed change to Fig. 2, formal drawings will be submitted including this change.

Rejection in view of Loan, et al.

Claims 3-7 were rejected under 35 USC § 103(a) as being unpatentable over Admitted prior art in view of *Loan, et al.* (U.S. 6,296,711). Claims 3 and 5 have been amended. For the reasons that follow, it is respectfully submitted that claims 3-9 are allowable over the applied art.

The establishment of a *prima facie* case of obviousness required that *all* of the elements of a claim be found in the prior art. It follows that if a single element of a claim is missing from the prior art, a *prima facie* case of obviousness cannot be properly established. Moreover, obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is a teaching, suggestion or motivation to do so found in the references relied upon. However, hindsight in never an appropriate motivation for combining references and/or the requisite knowledge available to one having ordinary skill in the art. To this end, relying upon hindsight knowledge of applicants' disclosure when the prior art does not teach nor suggest such knowledge results in the use of the invention as a template for its own reconstruction. This is wholly improper in the determination of patentability.

Claim 3, as amended, includes the limitation of: "...a pressure detecting means provided inside said upper electrode, wherein operation of said parallel-plate dry-

etching apparatus ceases if a pressure measured by said pressure detecting means is lower than a predetermined value.”

Claim 5, as amended, includes the limitations of:

“...a first pressure detecting means provided inside of said upper electrode;

a second pressure detecting means provided within said dry etching apparatus in which a wafer is placed; and

a detecting means which measures a pressure differential between respective pressures of said first and said second pressure detecting means, and upon reaching a predetermined pressure differential, operation of the apparatus is terminated.”

Accordingly, by either claim 3 or claim 5, if a particular threshold of pressure or pressure differential, respectively is reached, the etching apparatus ceases operation. It is respectfully submitted that these limitations are neither taught nor suggested by the applied art.

While Applicant's attorney in no way concedes that there is the requisite motivation to combine the reference to *Loan, et al.* with the teachings of Figs. 1 and 2 of the present application, assuming arguendo that this were the case, it is respectfully submitted that the reference to *Loan, et al.* lacks at least the teaching or suggestion of the pressure detecting means *wherein operation of said parallel-plate dry-etching apparatus ceases if a pressure measured by said pressure detecting means is lower than a predetermined value* as is specifically recited in claim 3. Similarly, it is respectfully submitted that the reference to *Loan, et al.* also lacks the recited teaching of claim 5 of first and second pressure detecting means and *a detecting means which measures a pressure differential between respective pressures of said first and said second pressure*

detecting means, and upon reaching a predetermined pressure differential, operation of the apparatus is terminated.

Rather, the reference to *Loan, et al.* includes pressure sensors (e.g., 51 and 53), which are used to measure vapor pressures of a chemical vapor deposition (CVD) chamber to control or monitor the deposition process. For example, the reference discloses using one pressure sensor to monitor the changes in the pressure when a chuck 74 is raised and lowered. (See column 15, lines 44-65 of the reference to *Loan, et al.* for support for this assertion). In another example, pressure sensors 51 and 53 measure the pressures at certain locations of the process chamber. If the difference between these measurements does not fall within a certain factor, adjustments are made so the optimum pressure is applied at the wafer. (Please see column 23, lines 28-42 of the reference to *Loan, et al.* for support for this assertion.)

However, the reference lacks at least the teaching of the limitations of claims 3 and 5 highlighted above, which are drawn to termination of the process if a certain pressure condition is met. For at least the reasons set forth above, claims 3 and 5, and the claims that depend therefrom are believed to be allowable over the applied art. Allowance is earnestly solicited.

With particular regard to claims 8 and 9, the Office Action of October 10, 2002 states that “inherently any pressure differences caused by the widening of the holes in the showerhead 72 would be detected.”

To establish inherency, *extrinsic evidence* must make clear that the missing descriptive matter is *necessarily present* in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. However, inherency may not be

established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances *is not sufficient*. It is unclear from the reference to *Loan, et al.* that the holes of showerhead 72 of the reference would necessarily widen during operation. Extrinsic evidence is respectfully requested to that end. If this assertion of inherency set forth in the Office Action is based on personal knowledge of the Examiner, an affidavit under 37 CFR § 1.104(d)(2) is respectfully requested.

For at least the reasons set forth above, the pending claims are believed to define over the applied art. Allowance is earnestly solicited.

CONCLUSION

In view of the foregoing amendments and remarks, reconsideration and withdrawal of all objections and rejections are respectfully requested. An early notice of allowance is earnestly solicited.

Except as otherwise stated in the previous Remarks, applicants note that each of the amendments have been made to place the claims in better form for U.S. practice or to clarify the meaning of the claims; not to distinguish the claims from prior art references, otherwise narrow the scope or comply with other statutory requirements.

In the event that there are any outstanding matters remaining in the present application, the Examiner is invited to contact William S. Francos, Esq. (Reg. No. 38,456) at (610) 375-3513 to discuss these matters.

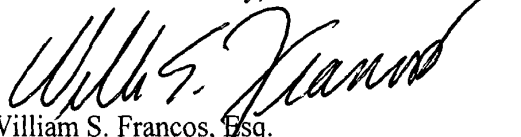
Petition is hereby made for a one-month extension of time under 37 CFR §1.136, extending the period of response from January 10, 2003 to February 10, 2003.

Permission is hereby given to charge Deposit Account Number 50-0238 the required fee under 37 C.F.R. §1.17.

If necessary, the Commissioner is hereby authorized in this, concurrent, and further replies to charge payment or credit any overpayment to Deposit Account Number 50-0238 for any additional fees under 37 C.F.R. §1.16 or under 37 C.F.R. §1.17.

Respectfully submitted on behalf of:

Oki Electronic Industry, Inc


William S. Francos, Esq.
Reg. No. 38,456

Date: February 10, 2003

VOLENTINE FRANCOS, P.L.L.C.
12200 SUNRISE VALLEY DRIVE
SUITE 150
RESTON, VA 20191
Phone: (703) 715-0870
Facsimile: (703) 715-0877

Marked Version Showing Changes to Paragraph in the Specification

[At page 2, line 4] When the gas-introducing plate 4 lying within the processing chamber of the etching apparatus is used up, the gas-introducing plate 4 becomes thin as shown in Fig. 2 [5]. Further, the gas holes 3 defined in the gas-introducing plate 4 reach a given size or more respectively, the following would occur. Plasma enters the backside (cooling plate side) of the gas-introducing plate from the etching-processing chamber 9 through the enlarged gas holes 3. Designated at numeral 10 in Fig. [5] 2 typically illustrates the entrance of the plasma into the backside of the gas-introducing plate 4. When the plasma enters therein, the state of discharge of the plasma on the wafer side becomes unstable. As a result, an etching characteristic is deteriorated and the wafer 8 is unusually processed.

Marked Version Showing Changes to the Claims

3. (Twice Amended) An apparatus for manufacturing a semiconductor device, comprising:

an upper electrode that supplies gas to a parallel-plate dry etching apparatus; and
a pressure detecting means provided inside said upper electrode [that supplies gas to a parallel-plate dry etching apparatus], wherein operation of said parallel-plate dry-etching apparatus ceases if a pressure measured by said pressure detecting means is lower than a predetermined value.

5. (Twice Amended) An apparatus for manufacturing a semiconductor device, comprising:

an upper electrode that supplies gas in a parallel-plate dry etching apparatus;
a first pressure detecting means provided inside of said upper electrode [that
supplies gas in a parallel-plate dry etching apparatus]; [and]
a second pressure detecting means provided within said dry etching apparatus in
which a wafer is placed; and
a detecting means which measures a pressure differential between respective
pressures of said first and said second pressure detecting means, and upon reaching a
predetermined pressure differential, operation of the apparatus is terminated.